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ABSTRACT

This essay presents the findings of a study employing a developmental approach to student acquisition of social responsibility. Professors at seven collegiate institutions of differing types who teach service-learning courses were asked if they would be willing to include their students in a study of social responsibility development through service learning. Four professors at three institutions were included after certain criteria were met; the final sample was of 56 students, 25 who participated in service-learning projects and 31 who did not (the control group). A new measure, the "Scale of Social Responsibility Development (SSRD) was chosen as the instrument for this study. Significant differences were found between pretest and posttest performance on all three scales for those who completed service-learning projects, and only on the "Activation" scale for the non-service-learning students. In addition, a significant difference was found on the added "Involvement" (combining "Realization" and "Activation" items) scale for service-learning students but not for non-service-learning students. The mean increase from pretest to posttest was dramatic for service-learning students on this combined scale, while it was relatively flat for non-service-learning students. Subject responses did not follow the projected phases, and the SSRD did not yield three clearly distinct scales with these participants, so it is not possible to determine if there was a phasic development of social responsibility. However, since those participants who engaged in a service-learning project showed a significant overall increase on the "Realization" and "Activation" scales, tentative support indicates that service learning does appear to increase social responsibility--at least on a short-term basis. (Contains 4 tables of data and 20 references.) (NKA)

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Service Learning and the Development of Social Responsibility

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Paper Presented at the 66th Annual Convention of the
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Chicago, IL
April 3rd, 1998

RUNNING HEAD: Service Learning and Social Responsibility

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In describing characteristics of seamless learning environments, George Kuh (1996) challenges educators to continually examine their roles in higher education, seeking ways they may more effectively respond to students' developmental needs and the demands of a rapidly changing society. He notes that the key task in designing institutional policies and practices is "to engage students in a variety of learning activities and to cultivate an institutional ethos that promotes involvement in educationally purposeful activities in settings in addition to the classroom" (p. 11).

One way educators across the nation have responded to this challenge is by creating service-learning programs that connect students to their communities and provide "real-world" learning environments. While service-learning has been defined in many ways, it is distinguished from other experiential methods, including community service, by its mutually beneficial goal of providing meaningful service to communities and providing valuable learning opportunities for students. One of the most widely cited and recognized definitions of service-learning comes from the Corporation for National Service:

> Service-learning is a method under which students learn and develop through active participation in a thoughtfully organized service experience that: is conducted in and meets the needs of a community and is coordinated with an institution of higher education; helps foster civic responsibility; is integrated into and enhances the academic curriculum of students; and includes structured time for students and participants to reflect on the service experience." (Corporation for National Service, 1993).

Service learning is by no means a new concept, nor is it a passing educational fad. Advocates of service learning and experiential education trace the beginning of a service-learning "movement" back to the creation of the Civilian Conservation Corps and Peace Corps, and to John Dewey's writings on experience and education (Sigmon, 1996). Its lasting potential is demonstrated in the extraordinary amount of human and financial resources allocated to the promotion of service learning on college campuses within the last decade. Three networks that have been particularly important to the service-learning movement are Campus Outreach Opportunity League (COOL--a grassroots, student-driven organization supporting collegiate service programs), Campus Compact (a national organization of 575 college presidents supporting and promoting academic service-learning), and the National Society for Experiential Education (an organization with a long history advocating many experiential educational approaches and practices). All three programs have done much to encourage student involvement in communities through service.

The Corporation for National and Community Service has nudged higher education further toward service learning with funding for the *Learn and Serve America-Higher Education* program. In the Corporation's first year of

operation of *Learn and Serve America* in 1995, $9.5 million was awarded to 116 college and university grantees (Gray, Geschwind, Ondaatje, Robyn, Klen, Sax, Astin, A., & Astin, H., 1996). In 1998, the *Learn & Serve America* program will support initiatives for more than 750,000 service-learning students in the nation's schools and colleges with more than $152 million of the national service budget earmarked for America Reads service-learning initiatives (Corporation for National Service, 1998).

The expansive nature of service learning is also demonstrated in the participation of over 1,150 faculty members, students, and practitioners in a service-learning listserv maintained by the Communications for a Sustainable Future (CSF) program at the University of Colorado at Boulder. This listserv receives over 1,000 requests annually for service-learning resources and networking opportunities (Crews, R., 1998, personal communication).

As service learning has gained greater attention and become an accepted practice in higher education, the need to better understand its specific pedagogical and developmental outcomes for students, faculty, institutions, and communities has also grown. In recent years, researchers have begun to investigate and clarify the transformative potential of service-learning experiences.

Recent findings on *Learn and Serve America* programs suggest that course-based community service delivers civic responsibility and civic-life outcomes better than co-curricular, voluntary community service:

> Service provided as part of a course had positive effects on a total of nine outcomes, most in the area of civic responsibility, indicating that course-based service helped to reinforce students' commitment to serving the community. In the area of life skills, course-based service promoted students' career preparation, skills in conflict resolution, and involvement problems facing the community... Course-based service also contributed to academic development by increasing students" amount of interaction with faculty (Gray et al., 1996, p. 62)

Other service-learning research has found positive effects in the areas of cognitive and moral development (Boss, 1994; Cohen & Kinsey, 1994), perceptions of academic performance and acquisition of course material (Serow, Ciechelski, & Daye, 1990; Cohen & Kinsey, 1994; Markus, Howard, & King, 1993; Bozeman, 1997; Howard, 1997), efficacy in affecting community change (Eyler, Giles, & Braxton, 1997); efficacy in influencing political structures (Eyler & Giles, 1994; Eyler, Giles, & Braxton, 1997); value of promoting racial tolerance and gains in understanding and appreciating diverse backgrounds and situations (Jordan, 1994; Meyers-Lipton, 1996; Howard, 1997); perceptions of social problems from a systemic rather than individual locus (Eyler, Giles, & Braxton, 1997); and commitment to future service participation (Meyers-Lipton, 1996, Eyler, Giles, & Braxton, 1997).

Eyler and Giles (1996) provide additional evaluative research on service-learning student outcomes. In their examination of various forms and types of service-learning in a sample of more than 1,500 students at 20 colleges and universities, they discovered the importance of placement quality, application of theory to practice, and discussion and writing. Specific findings highlighted the value of integrating analytical discussion and journal writing with service and study for maximal student benefit.

The Present Study

This essay presents the findings of a research study employing a developmental approach to student acquisition of social responsibility. The conceptual framework for this study is a multidimensional, multi-phasic model of service learning (Delve, Mintz, & Stewart, 1990). The motivation to create such a model came in response to the recognition that "involvement in community service is symbiotic with values development" (Delve et al., 1990). The authors, therefore, drew upon the values-oriented student development theories of Perry (1970), Kohlberg (1975), and Gilligin (1982). The service-learning model Delve, Mintz, & Stewart devised defined a set of five unique stages of development along several dimensions of variables. It supposes that intervention modes (service modes and settings), commitment levels (service-learning frequency and duration), behaviors (service needs and outcomes), balances (service challenges and supports), and goals for transition combine to move individuals through five phases of personal development.

The five phases of personal development identified by Delve et al. (1990) include *Exploration, Clarification, Realization, Activation,* and *Internalization*. In the *Exploration* phase, students seek many opportunities for service involvement and are enthusiastic to serve, but do not connect their service to the social issues at hand. Students in the *Clarification* phase may take a "salad bar approach" to service and continue to serve in a variety of settings while deciding where they most identify and relate. The *Realization* phase is a phase of greater awareness and transformation. Students better grasp the larger social context and become more focused on singular issues or populations. The *Activation* phase is one of greater advocacy and identification. Students typically become more active participants in their service and are motivated by social justice issues within the service context. Finally, students in the *Internalization* phase are those who have fully integrated service into their lives and professional careers.

One promising new measure, the "Scale of Social Responsibility Development" (SSRD), was created by Olney & Grande (1995) and was chosen as the instrument for the present study. The "Scale of Service Learning

Involvement" (Olney & Grande, 1995) was an earlier published version of the SSRD and was derived from the developmental phases of Delve et al. (1990). Because the distinctions between some of the phases in the Delve et al. (1990) model were not strong enough to support independent scales, Olney and Grande (1995) refined their instrument to assess three independent phases of development (*Exploration*, *Realization*, and *Internalization*). After testing and validation trials, a final version of the instrument, titled "Scale of Social Responsibility Development" was developed measuring the same three scales (now titled, *Exploration*, *Realization*, and *Activation)*. "Ideally, students develop into more committed, concerned citizens who genuinely care about the complexities of social injustice" (Olney & Grande, 1995, p. 49). The SSRD is intended to measure student development of social responsibility as they progress through *Exploration*, *Realization*, and *Activation* phases.

Method

Procedure and Sample

Professors at seven collegiate institutions of differing type (community college, small private, small public, large public, and small religious) who teach service-learning courses were contacted and asked if they would be willing to include their students in a study of social responsibility development through service learning. For their students to be included, these professors needed to be teaching *both* a service-learning and a non-service-learning course of roughly the same academic level, or they needed to be teaching a single course in which some students were allowed to choose a service-learning component while others could choose a non-service assignment. Four professors at three institutions ultimately met this criteria and their students were included in this study. The institutions from which the sample was drawn include a small, predominantly African American private college, a community college, and a large urban public institution. Including several types of institutions broadened the sample and reduced the likelihood that significant findings would be due to the unique attributes of students at a single school.

The final sample of 56 students included 25 who participated in service-learning projects during the semester and 31 who did not (included as a control group). 4 were first-year students, 22 sophomores, 14 juniors, 11 seniors, and 5 in their first-year of graduate education. 43 were female, and 13 were male, with the genders split roughly equally between service-learning and non-service-learning experiences. 46 (82%) of the participants indicated their race as "Caucasian," with 7 (13%) indicating African American and 3 (5%) indicating "other."

Among students who participated in service-learning projects, 60% contributed 15 hours or more to their volunteer work, with another 36% contributing 10-15 hours. Just one participant contributed less than 10 hours of volunteer work among those who participated in a service-learning project for their course. Also, it is important to note that some of those who did not participate in service-learning projects for the particular course included in the research did contribute volunteer hours in other ways. 4 of the 31 non-service-learning participants indicated volunteering at least a few hours for religious activities, while 6 participated in at least one social club and 7 devoted time to a non-specified personal or individual interest. Overall, among the non-service-learning participants, the majority (82%) contributed less than 10 hours of service to any organization (social or otherwise) during the semester, with the rest (18%) contributing 10-15 hours total.

During the first few weeks of the semester, all subjects completed an instrument which asked for demographic data and information on previous volunteer and service-learning work. Following these questions was the "Scale of Social Responsibility Development" (SSRD) (Olney & Grande, 1995, 1998) (the pretest). Near the end of the semester, after all service-learning projects were concluded, a similar instrument (with some modified demographic questions) was administered (the posttest).

Research Hypothesis

While anecdotal evidence suggests there is a relationship between involvement in service-learning experiences and student development of social responsibility, and other studies suggest the likelihood of such a relationship (e.g., Eyler, Giles, & Braxton, 1997; Jordan, 1994; Howard, 1997), there is little direct scientific data to support the connection. Hence, the present study explored one primary hypothesis:

> Ho1: Participating in a service-learning experience as part of an academic course will enhance development of social responsibility as measured by the SSRD.

In addition, this research sought to provide additional validity and reliability information for users of the SSRD.

Results

Analysis of the data was conducted in several phases. First, Cronbach's alphas were computed to assess scale and instrument reliabilities, and correlations were computed to assess scale differentiation. Next, factor analyses and hierarchical cluster analyses were performed to further examine the relationships of items and provide evidence of scale differentiation. Finally, to identify differences between pre- and posttest completions of the SSRD, several paired-sample t-tests were computed. In addition, a combined "Realization/Activation" scale was created and assessed because, according to the instrument's developers, consistently high correlations between the *Realization*

and *Activation* scales have created some doubt as to whether they are measuring distinct elements of social responsibility (Olney, personal correspondence, March, 1998). Additional t-tests were conducted on this combined scale, measuring what was herein labeled *Involvement*.

To provide an initial assessment of the reliabilities of the three intended scales, Cronbach's alphas were computed for each scale for both pre- and posttest administrations. Table 1 shows these alphas for the three intended scales and the added *Involvement* scale. The alphas were strong, suggesting the scales are reliable and supporting the consistently high reliabilities identified previously (Olney & Grande, 1995). However, they do not indicate whether or not the scales are clearly differentiated from one another. A series of correlations were run to assess the relationships between scales and are reported in Table 2. As is apparent, a number of positive correlations are present among the scales.

Table 1 Scale Reliabilities

	Overall	Service Learning	Non-Service Learning
Exploration	.927	.952	.879
Realization	.815	.886	.763
Activation	.929	.943	.920
Involvement	.937	.954	.919

Table 2 Scale Correlations

	Pre/Exp	Pre/Real	Pre/Act	Pre/Par	Post/Exp	Post/Real	Post/Act	Post/Par
Pretest/Exploration	---	-.045	.225	.047	.569**	-.170	.031	-.103
Pretest/Realization	-.214	---	.565**	.955**	-.087	.670**	.362**	.600**
Pretest/Activation	.304*	.590**	---	.783**	.179	.460**	.528**	.523**
Pretest/*Involvement*					-.002	.670**	.462**	.639**
Posttest/Exploration					---	.213	.456**	.326*
Posttest/Realization					-.168	---	.528**	.959**
Posttest/Activation					.440**	.695**	---	.875*
Posttest/*Involvement*								---

*significant at .05
**significant at .01

These positive correlations suggest a lack of differentiation among the scales, particularly among the *Realization* and *Activation* scales. While the *Exploration* scale in the pretest appeared to be clearly differentiated from the other two scales, in the posttest a surprising weak but significant relationship was identified between the *Exploration* and

Activation scales. With the questions in the *Exploration* scale directed at an individualistic, self-centered motivation for service activity, the significant relationship with the *Activation* scale—with its questions asserting an other-oriented, personally-committed view—is puzzling. However, the findings from the cluster analyses (below) suggest that the *Exploration* items make up a sufficiently distinct scale. Overall, though, these subjects did not appear to discriminate among the items on the SSRD as might have been expected. While findings (discussed below and presented in Table 5) show that a definitive shift in attitudes toward volunteerism and social responsibility occurred among those participating in service-learning projects, it cannot be determined if this shift followed the Delve et al. (1990) developmental model. It is also not apparent that an increase in a sense of social responsibility results in a corresponding decrease in volunteerism for selfish motivations. (Hence, attitudes suggested by *Activation* items may not be mutually exclusive of those suggested by *Exploration* items.)

Factor analyses (principal components) using orthogonal varimax rotations were performed on both pretest and posttest data to examine the relationships between the items and scales. These analyses were not sufficiently revealing, however, so a decision was made to conduct a series of hierarchical and partitioning cluster analyses. These analyses were conducted for pretest items, posttest items, and for all items combined. When applied to items, cluster analysis identifies a smaller number of homogeneous groups such that the items residing in a particular group are, in some sense, more similar to each other than to items residing in other groups. In the present case, this procedure was used to plot the relationship of items "performing alike." It would be expected that the items for each of the three scales would, for the most part, group together in distinct clusters. Initially, hierarchical clustering, which successively "fuses" (or combines) items into groups, was used. In hierarchical clustering, the items are initially considered to be undifferentiated, and then are partitioned into subgroups that differ in some meaningful way, typically using a distance measure. The hierarchical clustering suggested that there were two, and not three, groupings of the items.

This finding is supported by the results of partitioning (K-means) cluster analyses. Partitioning cluster analysis identifies which items belong to a predetermined (K) number of groups, again by use of a distance measure. Several analyses were performed using two through six groups. These analyses did not indicate three distinct groups of items, but two, and were consistent for the pretest, posttest, and combined (pretest and posttest items together) analyses. While the results of the hierarchical cluster analyses are too cumbersome to be reproduced here, results from the K=3 partitioning cluster analysis is shown in Table 3 (attached). Pretest and posttest items have been separated, with

clusters designated in the middle column, and items designated by "EXP" for *Exploration*, "REA" for *Realization* or "ACT" for *Activation* scales, and the question number from our questionnaire. The final "Distance" column shows the distance of each item from the cluster center.

Except for a few items, the *Exploration* items clearly belong to a distinct group or cluster. However, regardless of the number of groups considered, the *Realization* and *Activation* items do not separate into distinct groups. Hence, it appears respondents did not clearly differentiate between items in the *Realization* and *Activation* scales, suggesting that *Realization* and *Activation* scales are not significantly distinct. Overall, there appear to be two clear scales within the measure; the first one assessing individual *Exploration* of social responsibility and volunteerism, and the second assessing personal *Involvement* in, or possibly (from an examination of the items combined) awareness of, social issues.

The final data analysis procedures are presented in Table 4, showing means and paired-sample t-test results for both those who participated in service learning and those who did not. Significant differences were found between pretest and posttest performance on all three scales for those who completed service-learning projects, and on the *Activation* only scale for the non-service-learning students. In addition, a significant difference was found on the added *Involvement* (combining *Realization* and *Activation* items) scale for service-learning students but not for non-service learning students. The mean increase from pretest to posttest was quite dramatic for service-learning students on this combined scale, while it was relatively flat for non-service-learning students.

These findings are somewhat surprising in that those completing a service-learning project might be expected to show decreases on mean scores for the *Exploration* scale while showing increases on the *Realization*, *Activation* (and, therefore, the added *Involvement*) scales. This did not occur, as increases were found for all three scales among service-learning students. Also surprising is the significant increase on the *Activation* scale for non-service-learning students. One possible explanation for this increase may follow from the research design. All participants were students of professors who are committed to service learning and volunteerism, and most of the courses were in the social sciences (particularly Sociology and Psychology) with social-awareness emphases. Simply taking these courses with these faculty members may have inspired at least minimal increases in social responsibility among all participants. While increases were significantly less for those students who did not participate in service-learning projects, they were present nonetheless. In addition, these slight increases in mean scores might also be attributed to familiarity with the instrument (despite a 12-13 week time span between administrations) or to the

influence of social desirability factors (determining a social-awareness attitude in their professors, and wanting to please the professor with responses).

An additional interesting finding raises several questions. The service-learning and non-service-learning students appeared to begin at different levels. Those who chose the service-learning project had, across all scales, significantly lower initial mean scores than those who were in non-service-learning courses. A series of analyses of variance were computed attempting to determine if any of the demographic variables showed significant differences between the service-learning and non-service-learning students that might provide insight into the different initial means. However, no significant differences were found between the two groups on gender, race, age, academic year, amount of previous volunteer experience, or other outside volunteer experience during the current semester, and no significant interaction effects were apparent through multivariate analyses. Hence, no explanation for this finding was identified. Several speculative explanations present themselves (e.g., students taking service-learning courses are more predisposed to take such an instrument seriously and answer conservatively), however, this research cannot answer definitively why this occurred.

Table 4

Scale Means, Pretest & Posttest, for Service-Learning and Non-Service-Learning Students

	Service Learning(SL)	Non-SL	SL	Non-SL
Exploration	Mean	Mean	t	t
Pretest	51.60	55.45		
Posttest	54.80	54.32	2.326*	-.570
Realization				
Pretest	56.24	62.39		
Posttest	61.80	61.45	3.087**	-.462
Activation				
Pretest	34.36	36.45		
Posttest	38.44	39.77	3.148**	2.520*
Involvement (Realization and Activation Scales Combined)				
Pretest	90.60	98.84		
Posttest	100.24	101.23	3.533**	.788

**significant at .01
*significant at .03

In addition, the posttest also asked participants to assess themselves on seven attitude and personality variables, rating themselves as compared to "the average person (their) age" (1 = lowest 10%, 2 = below average, 3 = average, 4 = above average, and 5 = highest 10%). The seven variables included: Analytical and Problem-Solving Skills; Ability to Think Critically; Interpersonal Skills; Involvement with Social Problems Facing Our Society; Commitment to Serving Your Community; Ability to Work Cooperatively; Ability to Communicate Your Ideas. While service-learning participant means were higher than non-service-learning participants on all seven items, the only significant differences were identified for items "Ability to think critically" and "Analytical and problem-solving skills." (These higher self-reported levels of critical and analytical thinking create an obvious additional speculative explanation for the lower initial means on the SSRD than non-service-learning students; i.e., higher levels of critical thinking may have yielded more conservative responses to items. Again, such an explanation remains speculative as no true measure of critical thinking was included.) Since these questions were only asked following the service-learning component, no conclusions can be drawn as to whether the findings were a result of the service-learning experience or due to some other factor. However, it is interesting to note that there were no significant differences between service-learning and non-service-learning participants on the two items most directly relevant to social responsibility: "Involvement with Social Problems Facing Our Society" and "Commitment to Serving Your Community."

Discussion and Conclusions

Findings in this study were positive though not definitive. Subject responses did not follow the projected phases, and the SSRD did not yield three clearly distinct scales with these participants, so it is not possible to determine if there was a phasic development of social responsibility. However, those participants who engaged in a service-learning project showed a significant overall increase on the *Realization* and *Activation* scales (a much greater increase than that of non-service-learning participants). While the data provide no answer as to why non-service-learning participants had higher initial mean scores, clearly, the means of the service-learning participants increased much more dramatically. Hence, tentative support has been provided for Ho1 (service learning does appear to increase social responsibility—at least on a short-term basis).

Several concerns have been raised regarding the SSRD in this study. While the instrument yields reliable factors, two of the factors are so strongly correlated it is difficult to determine if they are measuring distinct aspects of social responsibility development. While non-service-learning students followed the more expected pattern of a

decrease in scores on the *Exploration* scale with a corresponding increase in scores on the *Activation* scale (surprising, since most did not participate to any great degree in service or volunteer activity during the research period), service-learning students showed significant increases across all three scales. These mixed findings suggest the best use of the SSRD may be as a one or two-scale instrument administered in a pretest/posttest manner to assess increases in social responsibility involvement (or possibly awareness of social responsibility issues), rather than as a tool intended to assess phasic or developmental progression. It might be preferable for some uses to drop the *Exploration* scale, combining the *Realization* and *Activation* scales into a single scale to measure specific increases in social responsibility over time. While the three scales have considerable face validity, the mixed findings here and the consistently high correlations among the scales (Olney & Grande, 1995) suggest the SSRD may best be used as a one or two-scale instrument. This is particularly true when assessing shorter-term increases. It is possible that this scale might yield results more in-line with a phasic development if administered on a more longitudinal basis, such as at the beginning of the first year of college, again following sophomore year, and finally at the conclusion of college, however, the high degree of correlation between *Realization* and *Activation* items raises serious doubts that a study over a longer period of time would yield greater differentiation. As an assessment of more immediate impact of service experiences on increases in social responsibility, a shortened, one-scale version composed of a mixture of selected *Realization* and *Activation* items may be more appropriate.

Ultimately, it does, indeed, appear that service learning has a measurable and significant impact on at least increases in, if not phasic development of, social responsibility. This study measured only immediate effects of service learning, and it does not include a more longitudinal component to determine if increases in the sense of social responsibility are long-term in nature. Scholars should explore the development of social responsibility through service learning across time to determine both the immediate and long-term benefits of service-learning experiences to students. In addition, research should continue to investigate the SSRD as a measure of social responsibility toward the establishment of more distinct scales and a more clear picture of the growth of students toward social responsibility—toward "making lifestyle choices that incorporate community values" (Delve et al., 1990, p. 17).

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Table 3 K-Means Cluster Analysis, Cluster Membership for K = 3 Analysis

PRETEST			POSTTEST		
ID	Cluster	Distance	ID	Cluster	Distance
ACT_Q71	1	5.473	EXP_Q35	1	3.395
ACT_Q68	1	5.566	EXP_Q38	1	4.003
ACT_Q26	1	5.646	EXP_Q23	1	4.157
ACT_Q41	1	5.781	EXP_Q60	1	4.586
ACT_Q37	1	5.898	REA_Q47	1	4.707
ACT_Q29	1	5.924	EXP_Q67	1	4.863
ACT_Q20	1	5.991	EXP_Q69	1	5.259
ACT_Q53	1	6.044	EXP_Q46	1	5.282
REA_Q17	1	6.321	EXP_Q15	1	5.514
ACT_Q16	1	6.429	EXP_Q33	1	5.570
ACT_Q72	1	6.485	EXP_Q36	1	5.703
ACT_Q39	1	6.497	EXP_Q30	1	5.714
ACT_Q43	1	6.588	EXP_Q27	1	6.356
ACT_Q14	1	6.925	REA_Q21	1	6.607
REA_Q61	1	7.007	REA_Q25	1	6.710
REA_Q34	1	7.016	ACT_Q55	1	7.593
REA_Q70	1	7.461	ACT_Q52	2	4.312
EXP_Q59	1	7.859	REA_Q54	2	4.788
ACT_Q58	2	5.202	ACT_Q57	2	5.008
ACT_Q44	2	5.211	ACT_Q65	2	5.157
ACT_Q52	2	5.340	ACT_Q58	2	5.193
ACT_Q28	2	5.549	ACT_Q72	2	5.329
REA_Q54	2	5.557	REA_Q42	2	5.581
REA_Q42	2	5.606	EXP_Q59	2	5.776
REA_Q66	2	5.614	ACT_Q26	2	5.847
ACT_Q18	2	5.828	ACT_Q71	2	5.854
REA_Q50	2	5.867	ACT_Q45	2	5.864
ACT_Q22	2	5.883	ACT_Q37	2	5.872
ACT_Q65	2	5.959	ACT_Q44	2	5.910
REA_Q13	2	6.050	ACT_Q41	2	6.251
ACT_Q45	2	6.125	ACT_Q68	2	6.280
REA_Q24	2	6.228	ACT_Q18	2	6.377
ACT_Q63	2	6.315	REA_Q13	2	6.424
ACT_Q57	2	6.329	REA_Q50	2	6.515
ACT_Q49	2	6.379	ACT_Q63	2	6.630
REA_Q31	2	6.631	ACT_Q20	2	6.670
REA_Q32	2	6.760	REA_Q24	2	6.687
EXP_Q51	2	7.661	ACT_Q28	2	6.723
EXP_Q64	2	7.866	REA_Q31	2	6.904
EXP_Q19	2	8.370	REA_Q32	2	6.928
EXP_Q48	3	4.904	ACT_Q49	2	6.983
EXP_Q33	3	4.965	ACT_Q22	2	7.048
EXP_Q67	3	5.220	ACT_Q16	2	7.632
EXP_Q35	3	5.427	ACT_Q62	3	5.465
EXP_Q15	3	5.723	ACT_Q53	3	5.745
REA_Q47	3	5.865	REA_Q61	3	5.773
EXP_Q23	3	5.946	REA_Q66	3	5.835
EXP_Q46	3	6.079	ACT_Q29	3	5.905
EXP_Q36	3	6.128	REA_Q17	3	5.914
EXP_Q38	3	6.201	EXP_Q56	3	5.931
EXP_Q69	3	6.205	REA_Q40	3	5.962
EXP_Q30	3	6.233	ACT_Q14	3	6.366
ACT_Q62	3	6.337	ACT_Q39	3	6.600
EXP_Q56	3	6.565	EXP_Q64	3	6.624
REA_Q25	3	6.587	EXP_Q19	3	6.764
REA_Q40	3	6.903	ACT_Q43	3	6.790
REA_Q21	3	7.096	EXP_Q48	3	6.794
EXP_Q60	3	7.119	REA_Q34	3	6.832
EXP_Q27	3	7.120	EXP_Q51	3	6.839
ACT_Q55	3	8.062	REA_Q70	3	7.013

K-means cluster analysis findings for a K=3 solution are presented here. In the "ID" column, items are designated by their scale affiliation (EXPloration, REAlization, and ACTivation) and question number. Cluster membership is shown in column two, and the distance from the cluster center is shown in column three